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MEMORANDUM FOR DISTRIBUTION

Subj: IMPLEMENTATION OF THE NAVAL AUDIT SERVICE HAZARDOUS
NOISE RECOMMENDATIONS

Ref: (a) Naval Audit Service Report N2010-0038 of June 22, 2010
(b) SECNAVINST 5000.2E of September 1, 2011

Encl: (1) Implementation of Naval Audit Service Report N2010-0038
Hazardous Noise Recommendations

The reference (a) report recommendations 6 through 15 are implemented by enclosure (1) on an interim basis by revising and superseding paragraphs 2.4.7.2, 6.3, and 6.3.1 in reference (b). Enclosure (1) will be incorporated into the next update of reference (b).

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(Paragraphs 2.4.7.2, 6.3, 6.3.1 supersede those in SECNAVINST 5000.2E)

2.4 Technology Development and Acquisition Strategies

2.4.7 Support Strategy

2.4.7.2 Environment, Safety, and Occupational Health (ESOH) Considerations

SECNAVINST 5000.2E, chapter 2, references (a) and (1), and OPNAVINST 5100.24B require integration of system safety and ESOH risk management into the overall systems engineering and risk management process consistent with MIL-STD-882D. MIL-STD-882D provides procedures to identify all ESOH hazards and provides a process to eliminate, mitigate, or accept risk.

While the acquisition strategy no longer incorporates a summary of the Programmatic ESOH Evaluation (PESHE), the acquisition strategy shall address ESOH hazards and associated risks and proposed mitigation plans. The systems engineering plan (SEP) shall include a strategy for integrating ESOH considerations including technology into the systems engineering process, identification of ESOH responsibilities, a method for tracking progress, and a schedule for National Environmental Policy Act (NEPA) (sections 4321-4370d of title 42, U.S.C.) and Executive Order 12114 compliance for events or proposed actions throughout a program's life-cycle. If the foregoing items are detailed in the program PESHE, then a brief summary of those items in the SEP with a reference or hot link to the PESHE is sufficient. Program and technical reviews shall address all high and serious ESOH risks, assess risk mitigation plans, and verify that all risks have been accepted by the proper risk acceptance authority. See SECNAVINST 5000.2E, chapter 2, table E2T1, and chapter 6, paragraph 6.3.

6.3 Environment, Safety, and Occupational Health (ESOH)

PMs for all acquisition programs shall integrate life-cycle ESOH into their overall systems engineering and risk management processes. As part of risk reduction, the PM shall eliminate ESOH hazards through design selection where possible, and shall manage ESOH risks where hazards cannot be eliminated using the system safety design order of precedence pursuant to MIL-STD-882D. Navy programs shall follow CNO memorandum 5090 Ser N4/8U156042, Environmental Readiness in Systems Acquisition, of 29 Jul 2008 regarding the integration of environmental readiness into acquisition.

DoD acquisition policy requires environment and safety to

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be addressed throughout the acquisition process. Occupational health is included in the DoD's list of safety considerations as are human and system interfaces, toxic and hazardous materials (HAZMAT) and substances, production and manufacturing, testing, facilities, infrastructure and land, logistical support, weapons, and munitions/explosives. DoD acquisition policy also requires the PM to apply HSI to optimize total system performance of which safety and occupational health are major domains.

SECNAVINST 5000.2E, chapter 6, reference (b) implements the ESOH elements of the acquisition policy by requiring PMs to manage ESOH risks for their system's life-cycle using the methodologies described in SECNAVINST 5000.2E, chapter 6, reference (aa). DON compliance with MIL-STD-882D is mandatory for assignment of a risk assessment code which is a combination of one severity category and one probability level from Tables E6T3 and E6T4 that are included below. PMs should focus resources upon the areas of greatest risk and greatest return on investment (ROI) pursuant to SECNAVINST 5000.2E, chapter 6, reference (ab). These areas are program dependent but include noise, vibration, heat stress, ergonomics, human factors, hazardous energy control, flight safety, survivability factors, and confined space, toxic gases control; environmental compliance HAZMAT and process management; and related ventilation and process controls.

Uniform risk acceptance authority is defined by this paragraph. ASN(RD&A) is the risk acceptance authority for high ESOH risks and for human exposure to hazardous noise where steady-state noise levels exceed and/or impulse noise levels exceed the Navy Occupational Exposure Limits (NOEL) established in OPNAVINST 5100.23G, Chapter 18. PEOs and SYSCOM commanders, or flag-level or Senior Executive Service (SES) designees, DRPMs, and Chief of Naval Research (CNR) are the risk acceptance authorities for serious ESOH risks. PMs are the risk acceptance authorities, which may not be delegated, for medium and low ESOH risks. ESOH hazards definitions and risk levels/matrix are defined in Tables E6T3 and E6T4. The PM shall collaborate with the user representative during the ESOH risk mitigation process throughout the life-cycle and the user representative must provide formal concurrence prior to all high- and serious-risk mitigation and acceptance decisions. Mishap Severity, Probability of occurrence, Risk Assessment Values/Codes, and high, serious, medium, and low Risk Categories are defined in Tables E6T3 and E6T4. Program and technical reviews shall address all high and serious ESOH risks, assess risk mitigation plans, and verify that all risks have been accepted by the proper risk

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acceptance authority.

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**Table E6T3 ENVIRONMENTAL, SAFETY, AND OCCUPATIONAL HEALTH (ESOH)
MISHAP SEVERITY CATEGORIES AND PROBABILITY LEVELS**

SEVERITY CATEGORIES			
Description	Severity Category	Mishap Result Criteria	
Catastrophic	1	Could result in one or more of the following: death, permanent total disability, irreversible significant environmental impact, or monetary loss exceeding \$10M.	
Critical	2	Could result in one or more of the following: permanent partial disability, injuries or occupational illness that may result in hospitalization of at least three personnel, reversible significant environmental impact, or monetary loss exceeding \$1M but less than \$10M.	
Marginal	3	Could result in one or more of the following: injury or occupational illness resulting in one or more lost work days, reversible moderate environmental impact, or monetary loss exceeding \$100K but less than \$1M.	
Negligible	4	Could result in one or more of the following: injury or occupational illness not resulting in a lost work day, minimal environmental impact, or monetary loss less than \$100K.	
PROBABILITY LEVELS			
Description	Level	Specific Individual Item	Fleet or Inventory
Frequent	A	Likely to occur in the life of an item.	Continuously experienced.
Probable	B	Will occur several times in the life of an item.	Will occur frequently.
Occasional	C	Likely to occur sometime in the life of an item.	Will occur several times.
Remote	D	Unlikely, but possible to occur in the life of an item.	Unlikely but can reasonably be expected to occur.
Improbable	E	So unlikely, it can be assumed occurrence may not be experienced in the life of an item.	Unlikely to occur, but possible.
Eliminated	F	Incapable of occurrence in the life of an item. This category is used when potential hazards are identified and later eliminated	Incapable of occurrence within the life of an item. This category is used when potential hazards are identified and later eliminated.

Table E6T4 ESOH RISK ASSESSMENT MATRIX

PROBABILITY LEVELS	SEVERITY CATEGORIES			
	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
Frequent (A)	High	High	Serious	Medium
Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low
Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

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(Paragraphs 2.4.7.2, 6.3, 6.3.1 supersede those in SECNAVINST 5000.2E)

SECNAVINST 5000.2E, chapter 6, reference (b) further requires the PM to ensure that appropriate ESOH efforts are integrated across disciplines and into systems engineering to determine system design characteristics that can minimize ESOH hazards (such as human exposure to hazardous noise) and the risks of acute or chronic illness, disability, or death or injury to operators and maintainers; and enhance job performance and productivity of the personnel who operate, maintain, or support the system. Moreover, the PM in concert with the user and the test and evaluation communities, is required to provide safety releases pursuant to OPNAVINST 5100.24B that must include formal ESOH risk acceptance to the developmental and operational testers prior to any test using personnel.

SECNAVINST 5000.2E, chapter 6, reference (b) requires that PMs support system-related class A and B mishap investigations by providing analyses of hazards that contributed to the mishap and recommendations for materiel risk mitigation measures, especially those that minimize human errors. Mishap data summaries and investigation reports of serious mishaps may be obtained from the Naval Safety Center.

Effective ESOH efforts encompass establishing ESOH responsibilities within an acquisition program's organizational structure; developing strategies to ensure compliance with ESOH statutory and regulatory requirements; identifying and managing HAZMATs, wastes, and pollutants for the life-cycle of the system (including demilitarization and disposal); identifying and tracking the mitigation of ESOH hazards and associated risks; and formally accepting and communicating identified ESOH risks and their associated mitigations, including obtaining formal user representative concurrence on high and serious risks. Technical Review Boards (TRBs) established by Naval SYSCOM Systems Engineering Policy joint instruction of 19 January 2010 will oversee systems engineering technical reviews (SETRs) to ensure that programs identify and assess known/recognized ESOH hazards (such as human exposure to hazardous noise) early in the acquisition process.

PMs shall prepare a programmatic ESOH evaluation (PESHE) pursuant to SECNAVINST 5000.2E, chapter 6, reference (b), enclosure 12, and SECNAVINST 5000.2E, chapter 2. During system design, the PM shall document HAZMATs used in the system and plan for the system's demilitarization and disposal. Engineering support during operations and sustainment shall be summarized in the PESHE. A summary of the PESHE shall be included in the

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acquisition strategy. The summary shall include the NEPA and EO 12114 compliance schedule stipulated by the National Environmental Policy Act, which outlines the PM's assessment on what environmental analyses are required for each proposed action associated with the system's life-cycle and milestone schedule. Prior to IOC, the PESHE shall be reviewed and updated to include the full consideration of fleet representative input associated with environmental issues relative to post-IOC operations at Navy training ranges and operating areas. The PESHE shall be coordinated with affiliated SYSCOM ESOH subject matter experts before being approved by the PM. The PESHE is required at program initiation for ships, milestones B and C, and full-rate production decision review (FRP DR) for all programs. PMs shall approve the PESHE. The PESHE shall be provided electronically to Deputy ASN(RD&A) (Acquisition and Procurement) (DASN(AP)), the Assistant Secretary of the Navy (Energy, Installations and Environment) (ASN(EI&E)), a PM's supporting SYSCOM, CNO (CNO (N09F) and Deputy Director of Energy and Environmental Readiness Division (OPNAV (N45))) for Navy programs, and MARCORSYSCOM for Marine Corps programs for information. PMs shall integrate the ESOH risk management strategy into their program's SEP. PMs shall present the program's ESOH posture and status at program decision meetings (PDMs) and annex 1-B Gate Reviews. CNO (N09F) will assist CNO (N1) in establishing the requirements for the HSI areas of safety and occupational health.

ASN(RD&A) is responsible for ensuring DON science and technology (S&T) projects and acquisition programs comply with DON ESOH policy and is the focal point for all DON S&T and acquisition ESOH issues.

ASN(EI&E) is responsible for formulating DON ESOH policy (SECNAVINST 5000.2E, chapter 6, reference (ab)). ASN(EI&E), or designee, as a program decision principal advisor will attend PDMs, and also Gate Reviews, if there are ESOH issues.

CNO and CMC shall support ASN(RD&A) in developing acquisition ESOH requirements in the program system design specification (SDS) that implements CDD and CPD ESOH (such as human exposure to hazardous noise) threshold and objective requirements, recommending mandatory acquisition ESOH policy, assisting in ESOH policy implementation, reviewing ESOH related documentation, and providing ESOH advice and assistance to acquisition personnel.

The Chief of the Bureau of Medicine (BUMED) shall support ASN(RD&A) in integrating occupational health considerations into

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S&T projects and the systems engineering process of acquisition programs. The PM may request BUMED conduct health hazard assessments for evaluation of HAZMATs and processes pursuant to BUMEDINST 6270.8B of 3 April 2008.

The CNR and PMs shall ensure ESOH risk levels have been identified in S&T projects and acquisition programs, respectively, pursuant to the risk management processes of SECNAVINST 5000.2E, chapter 6, reference (ab). Program goals shall incorporate ESOH criteria where regulatory factors may impinge on fielding, range use, and deployment options or affect operators' health and safety.

6.3.1 ESOH Compliance

PMs shall comply with ESOH statutory and regulatory requirements, including SECNAVINST 5000.2E, chapter 6, references (ac), (ad), (ae) (for Navy), and (af) (for Marine Corps). The impact of ESOH requirements on a program's life-cycle cost, schedule, and performance and the ESOH impact of a program's system on the user and the operating environment shall be identified to the milestone decision authority (MDA). PMs shall maintain a log of identified ESOH hazards, risk mitigation plans, assessment of residual risk (such as mishap risk), and residual risk acceptance by the proper risk acceptance authority. Internal control oversight of ESOH hazards, risk mitigation plans, and residual risk acceptance will be conducted during SETRs, TRBs, Independent Logistics Assessments (ILAs), and Gate Reviews.